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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/679,202	10/06/2003	William Glenn Spadafora	01837.0041-00000	4567
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FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER LLP 901 NEW YORK AVENUE, NW WASHINGTON, DC 20001-4413			EXAMINER BOEHLER, ANNE MARIE M	
			ART UNIT 3611	PAPER NUMBER

DATE MAILED: 05/16/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/679,202	Applicant(s) SPADAFORA, WILLIAM GLENN	
	Examiner Anne Marie M. Boehler	Art Unit 3611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 October 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-23 is/are allowed.
- 6) ☒ Claim(s) 24-36 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 10/6/03.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

1. Claims 33 and 35 are objected to because of the following informalities:

In claim 33, line 2, "-type-" should be deleted.

In claim 35, line 2, "the frameless stepping type" lacks clear antecedent basis in the claim and "type" should be deleted. Appropriate correction is required.

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "gearbox coupled between the servo motor and the drive screw" (claim 29) and the "frameless, stepping type" motor (claim 35) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner,

the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 24-28 are rejected under 35 U.S.C. 102(b) as being anticipated by Frank (USPN 5,267,627).

Frank teaches a power steering system including a motive cylinder, a pump 2, first and second control conduits 9c, 9d, from the pump to ends of cylinder. A valve 29 is positioned to selectively control flow between the conduits. A controller 14 is responsive to sensed steering torque (from sensor 6) and sensed steering wheel angle or position (from sensor 19) and steering position (from sensor 16) and controls bidirectional electric motor 1. The motor controls the pump 2 to provide steering assist.

5. Claims 25 and 28 are rejected under 35 U.S.C. 102(b) as being anticipated by Adams (USPN 4580651).

Adams teaches a power steering system including a motive cylinder 5, a pump 13, and first and second control conduits 15, 16 from the pump to ends of the cylinder. A controller 19 is responsive to sensed steering torque (from sensor 17) and controls a bidirectional electric motor 1. The motor controls the pump 2 to provide steering assist.

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6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 29-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Frank (USPN 5,267,627) in view of Kaye (4,872,310).

Frank teaches all of the claimed features except a linear drive screw engaging a piston within a hydraulic cylinder assembly that forms a pump.

Kaye shows, in Figures 2, a system including an electric motor 72 that drives a drive screw 74 that engages a piston 33 in hydraulic cylinder 31. First and second fluid lines 38, 48 connect between ports in the hydraulic cylinder and left and right ports in a power cylinder 12. Figure 1 shows an embodiment where the power screw 52 or 54 is inserted directly into the pistons 32, 42. Kaye also uses position encoders connected to the motor or rod 10.

It would have been obvious to one of ordinary skill in the art to provide the Frank system with a pump in the form of a double-acting cylinder and to use a drive screw connection between motor and pump, as taught by Kaye, in order to provide unimpeded linear output without the need to mechanically disconnect the output member from the actuator motor. Frank is silent regarding a gearbox at the output from the motor, however, it is old and well known to provide a gearbox for reduction gearing on a motor, in order to reduce speed and increase torque within a relatively small space.

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8. Claims 33-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Frank and Kaye as applied to claims 29-32 above, and further in view of Black.

The combination lacks a teaching to provide a rotary type encoder, an emitter disk, an emitter module, and a frameless stepping servo motor with permanent magnet rotors.

Black teaches that a frameless, stepping motor with a rotary encoder, emitter disk 96, sensor and emitter module 98, and permanent magnet rotors is conventional.

It would have been obvious to one of ordinary skill in the art to provide the combination system with a frameless stepping motor having permanent magnet rotors and a rotary actuator with an emitter disk, a sensor, and an emitter module, as taught by Black as being conventional, in order to provide effective motor drive for the actuator.

9. Claims 1-23 are allowed.

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Frank (USPN 5,279,380) shows a power steering system using a motor driven bi-direction pump.

Chuang shows a motor driven power cylinder fluidly connected to an actuator cylinder 60.

Feightener shows a motor driven bi-directional hydraulic power cylinder.

Inaguma shows a power steering system responsive to a pressure differential between chambers of the actuator cylinder.

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11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anne Marie M. Boehler whose telephone number is 571-272-6641. The examiner can normally be reached on 7:30-5:00, Monday-Thursday, and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lesley Morris can be reached on 571-272-6612. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Anne Marie M Boehler
Primary Examiner
Art Unit 3611

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